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Roanoke County Administration Center  
5204 Bernard Drive  
Roanoke, Virginia 24018

The Board of Supervisors of Roanoke County, Virginia met this day at the Roanoke County Administration Center, this being the fourth Tuesday and the second regularly scheduled meeting of the month of February 2010. Audio and video recordings of this meeting will be held on file for a minimum of five (5) years in the office of the Clerk to the Board of Supervisors.

**IN RE: CALL TO ORDER**

Chairman Church called the meeting to order at 3:00 p.m. The roll call was taken.

**MEMBERS PRESENT:** Chairman Joseph B. "Butch" Church; Vice-Chairman Charlotte A. Moore, Supervisors Michael W. Altizer, Eddie "Ed" Elswick, Richard C. Flora

**MEMBERS ABSENT:** None

**STAFF PRESENT:** B. Clayton Goodman III, County Administrator; Diane D. Hyatt, Assistant County Administrator; Daniel R. O'Donnell, Assistant County Administrator; Teresa Hamilton Hall, Director of Public Information; Paul M. Mahoney, County Attorney; Deborah C. Jacks, Clerk to the Board

**IN RE: OPENING CEREMONIES**

The invocation was given by Pastor Jack Lowe of the Peters Creek Church of the Brethren. The Pledge of Allegiance was recited by all present.

**IN RE: REQUESTS TO POSTPONE, ADD TO, OR CHANGE THE ORDER OF AGENDA ITEMS**

Chairman Church announced that item E-1 under New Business the Presentation from the U. S. Marine Corps Reserve Unit and the Marine Corps League and appropriation of funds in the amount of \$10,000 from the 15<sup>th</sup> annual Marine Mud Run would be moved to the evening session.

Mr. Goodman added a briefing on the recent structure fire in Roanoke County and the brush fire in Craig County and Roanoke County by Chief Richard E. Burch.

There were no objections.

**IN RE: BRIEFINGS**

1. Briefing on recent structure fire in Roanoke County and the brush fires in Roanoke and Craig Counties (Richard E. Burch, Chief of Fire and Rescue)

Chief Burch updated the Board on two very challenging fires. The First occurred on March 19, 2011 at 6:46 p.m. and was located at Two Ford Road. Crews responding included Cave Spring, Back Creek, Clearbrook, Vinton and Roanoke City. The second fire was a brush fire along the Roanoke County/Craig County line encompassing 647 total acres, of which 99 were in Roanoke County. Chief Burch advised this was a joint effort between Roanoke County Craig County, State Division of Forestry and the Federal U. S. Parks Service. Chief Burch thanked all crew members both volunteer and regular. All Supervisors thanked and congratulated Chief Burch for a job well done.

**IN RE: REQUEST FOR PUBLIC HEARINGS AND FIRST READING OF REZONING ORDINANCES - CONSENT AGENDA**

1. **The petition of Ray Craighead to obtain a Special Use Permit in a C-2, General Commercial, District for the purpose of operating a drive-in or fast food restaurant on 0.62 acre, located at 4309 Starkey Road, Cave Spring Magisterial District**

Supervisor Moore moved to approve the first readings and set the second readings and public hearings for March 22, 2011. The motion carried by the following recorded vote:

AYES: Supervisors Moore, Altizer, Flora, Elswick, Church

NAYS: None

**IN RE: APPOINTMENTS**

1. **Building Code Board of Adjustments and Appeals (Fire Code Board of Appeals**

Supervisor Flora requested the Clerk to the Board of Supervisors contact Mr. Leffell regarding his interest in extending his appointment for an additional term.

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IN RE:           **CONSENT AGENDA**

**RESOLUTION 022211-1 APPROVING AND CONCURRING IN  
CERTAIN ITEMS SET FORTH ON THE BOARD OF  
SUPERVISORS AGENDA FOR THIS DATE DESIGNATED AS  
ITEM H- CONSENT AGENDA**

BE IT RESOLVED by the Board of Supervisors of Roanoke County, Virginia, as follows:

That the certain section of the agenda of the Board of Supervisors for February 22, 2011, designated as Item H Consent Agenda be, and hereby is, approved and concurred in as to each item separately set forth in said section designated Items 1 through 5 inclusive, as follows:

1. Approval of minutes – February 8, 2011
2. Donation of two storm drainage easements on the property of the Village at Tinker Creek Homeowners Association and the Tinker Creek Developers LLC located on Plantation Circle (Route 1899) (Tax Map Nos. 27.20-1-28 and 27.20-1-39.2) in the Hollins Magisterial District
3. Confirmation of appointment to the Roanoke Regional Airport Commission
4. Request to accept and appropriate funds in the amount of \$7,000 of contributions from Hollins Volunteer Fire Company to share in funding equipment needs for the new fire engine purchased through our truck loan agreement
5. Resolution requesting changes in the Virginia Department of Transportation Secondary System of State Highways, Route 651, Mountain View Road, Vinton Magisterial District

On motion of Supervisor Altizer to adopt the resolution, and carried by the following recorded vote:

AYES:           Supervisors Moore, Altizer, Flora, Elswick, Church

NAYS:           None

**RESOLUTION 022211-1.d REQUESTING CHANGES IN THE  
VIRGINIA DEPARTMENT OF TRANSPORTATION SECONDARY  
SYSTEM OF STATE HIGHWAYS, ROUTE 651, MOUNTAIN VIEW  
ROAD, VINTON MAGISTERIAL DISTRICT**

WHEREAS, the street(s) described on the attached VDOT Form AM-4.3, fully incorporated herein by reference, are shown on plats recorded in the Clerk's Office of the Circuit Court of Roanoke County; and

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WHEREAS, the representative for the Virginia Department of Transportation has advised this Board that the street(s) meet the requirements established by the Virginia Department of Transportation's Subdivision Street Requirements; and

WHEREAS, THE Virginia Department of Transportation requests a resolution from the Roanoke County Board of Supervisors to abandon old road facilities, and subsequently add newly constructed road facilities.

NOW, THEREFORE, BE IT RESOLVED, this Board requests the Virginia Department of Transportation abandon, and subsequently add, the facilities described on the attached Form AM-4.3 to the secondary system of state highways, pursuant to §33.1-155, Code of Virginia, and the Department's Subdivision Street Requirements, after receiving a copy of this resolution.

BE IT FURTHER RESOLVED, the Virginia Department of Transportation guarantees a clear and unrestricted right-of-way, as described and any necessary easements for cuts, fills and drainage.

BE IT FURTHER RESOLVED, that a certified copy of this resolution be forwarded to the Residency Administrator for the Virginia Department of Transportation.

On motion of Supervisor Altizer to adopt the resolution, and carried by the following recorded vote:

AYES: Supervisors Moore, Altizer, Flora, Elswick, Church

NAYS: None

**IN RE: REPORTS**

Supervisor Flora moved to receive and file the following reports. The motion carried by the following recorded vote:

AYES: Supervisors Moore, Altizer, Flora, Elswick, Church

NAYS: None

**1. General Fund Unappropriated Balance**

**2. Capital Reserves**

**3. Reserve for Board Contingency**

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4. **Treasurer's Statement of Accountability per Investment and Portfolio Policy as of January 31, 2011**
  5. **Statement of Budgeted and Actual Revenues as of January 31, 2011**
  6. **Statement of Budgeted and Actual Expenditures and Encumbrances as of January 31, 2011**
  7. **Accounts Paid–January 2011**

**IN RE: WORK SESSIONS**

At 3:10 p.m. Chairman Church moved to go into work session. At 3:20 p.m. Chairman Church recessed to the 4<sup>th</sup> floor for work session.

1. **Work session to discuss fiscal year 2011-2012 budget development:**
  - a. **Review Roanoke County debt (Rebecca Owens, Director of Finance)**
  - b. **Update on fiscal year 2011-2012 budget (Brent Robertson, Director of Management and Budget)**
  - c. **Update on Community Services Act (CSA) Funding issues in the General Assembly (Daniel O'Donnell, Assistant County Administrator)**
  - d. **Review of the preliminary Roanoke County School appropriation (Diane D. Hyatt, Assistant County Administrator)**

In attendance for this work session were Brent Robertson, Director of Management and Budget; Diane D. Hyatt, Assistant County Administrator; Daniel R. O'Donnell, Assistant County Administrator; Rebecca Owens, Director of Finance and Laurie Gearheart, Assistant Director of Finance.

Ms. Owens started off the session by reviewing Roanoke County debt through the use of a PowerPoint presentation. A copy of the presentation is on file in the office of the Clerk to Board of Supervisors.

Supervisor Altizer inquired what the ratio of commercial to residential currently was with Ms. Owens responding that she would research and advise.

Chairman Church inquired what the County's general fund balance as a percent of revenues was compared to other localities with Ms. Owens responding that she would need to research and advise.

Supervisor Flora commented it would be interesting to see how this fits

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into the Schools and Roanoke County CIP in terms of current projects, the value of those projects and just how far these projects are spread out. Additionally, Supervisor Flora stated when the policy was adopted there was some discussion about eventually paying for all projects with money that had been set aside and the ability not to borrow funds. He stated he does not see that ever occurring under this scenario. Diane Hyatt, Assistant County Administrator, explained that policy was to come from major and minor capital which will be going in at the end of the year. Supervisor Flora indicated this should be revisited because it was not happening. Ms. Hyatt detailed it is happening on the school side and it will on the County side probably after this year, because money is going into building up the unappropriated balance before it goes into that major capital account. She explained Roanoke County is anticipated to be fully funded after this year in the unappropriated balance, which will result in more funds going into the major capital account. Supervisor Flora stated he felt if Roanoke County kept tapping money for projects, the fund is not going to build. He stated he is of the opinion Roanoke County must make decisions as whether or not it is going to pay for projects out of these major and minor, or to preserve this money to pay off our future debt or pay cash for projects. He stated he thinks the most critical question is how does this all fall out with all the projects that the Schools and the County have over the next twenty years. Ms. Hyatt advised the Schools reevaluate every year on a worksheet and they do take their planned borrowings and work them into that plan. She indicated Staff had indicated that it is not too early to go ahead and be planning for our next borrowing which is coming up in 2013/2014. Supervisor Flora indicated that would like to know what projects are lined up in the CIP, how much the value is and when they might be funded and to take a look at the school's at the same time; stating they kind of advanced theirs because they took some of their own money and used it for the last three projects. Ms. Hyatt indicated the Schools did not borrow last year because they are saving the \$10 million to go with their next year's \$10 million for Cave Spring. Ms. Owens stated staff would work on this and bring back to the Board at a later date.

Next, Mr. Robertson advised Staff was in a holding pattern awaiting the final outcome of the State Budget. Mr. Robertson provided the Board with a spreadsheet showing the budget comparisons between the Governor, House and Senate.

Mr. O'Donnell gave a brief outline of the proposed changes to the Comprehensive Services Act (CSA) program if the program were shifted to the local governments versus the states. All Supervisors expressed their concern of the various appropriation actions. Chairman Church suggested that a resolution be prepared to express these concerns and it was the consensus of the Board to approve the resolution at the evening session. Mr. Paul Mahoney, County Attorney was directed to prepare this resolution.

Ms. Hyatt then asked for any agenda items for the joint meeting with the School Board be provided to her.

The work session was held from 3:35 p.m. until 4:35 p.m.

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- 2. Work Session on proposed amendments to the Roanoke County Design Handbook to incorporate development standards for private roads, sidewalks, shared use paths, trails and bicycle accommodations (Philip Thompson, Deputy Director of Planning; John Murphy, Zoning Administrator; Megan Cronise, Principal Planner)**

In attendance for this work session were Philip Thompson, Deputy Director of Planning; John Murphy, Zoning Administrator; Megan Cronise, Principal Planner; George Simpson, County Engineer and Brian Epperly, Transportation Engineer. Ms. Cronise reviewed the proposed changes in the Design Handbook. Supervisor Altizer remarked that all of his recommendations had been incorporated.

The work session was held from 4:50p.m. until 5:08 p.m.

**IN RE: BRIEFINGS**

At 7:00 p.m., Chairman Church moved to return to open session.

- 1. Review Volunteer Incentive Program (VIP) requirements (Woody Henderson, Volunteer Chief and Chairman of VIP Board of Trustees)**

In attendance with Chief Henderson was Colin Gee, Volunteer Chief for Mt. Pleasant. Chief Henderson reviewed the Program

Also in attendance was Chief Emerson Schoonover from Mason's Cove. He indicated that he did not have a problem with the program; however, he felt a closer look should be given to the group from 1985 through 1992 that need recertification, after that period the recertifications were for life.

Chairman Church then advised on September 28, 2010, the Board held a work session and it was the consensus of the Board to have B. Clayton Goodman III, County Administrator, review and work with the trustees to determine if there was something missing, was there something that could be done better or is the plan fine the way it is. Mr. Goodman indicated that he would be glad to work with the trustees to see what could be done. This is a briefing to bring the Board up-to-date on the status of the program.

**IN RE: NEW BUSINESS**

- 1. Presentation from the U. S. Marine Corps Reserve Unit and the Marine Corps League and appropriation of funds in the amount of \$10,000 from the 15<sup>th</sup> annual Marine Mud Run (Pete Haislip,**

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**Director of Parks, Recreation and Tourism)****A-022211-2**

Mr. Eric Kritter, Assistant Commander presented the check for \$10,000 to Pete Haislip and Chairman Church. Also in attendance was Commander Mike Sheppard from the U. S. Marine Corps League and Greg Martin, Manager of Camp Roanoke.

Supervisor Church moved to approve the staff recommendation to accept and appropriate the \$10,000 contribution from the 15<sup>th</sup> annual Marine Corps League Mud Run to the Camp Roanoke Fee Class Account. The motion carried by the following recorded vote:

AYES: Supervisors Moore, Altizer, Flora, Elswick, Church

NAYS: None

**2. Resolution Expressing the Grave Concerns of the Roanoke County Board of Supervisors over the various appropriation actions of the 2011 Session of the Virginia General Assembly (Paul M. Mahoney, County Attorney)**

Mr. Mahoney explained during the work session discussion ensued on a variety of difficult budget issues, specifically Assistant County Administrators Diane Hyatt and Dan O'Donnell explained several very critical issues the General Assembly in Richmond is currently struggling with. As a result of the work session, many of the Board members had expressed concerns on a variety of significant budget topics that affect Roanoke County in terms of the difficult decisions that will need to be made over the next several months with respect to the local budget. At that time, the Board requested a resolution be prepared to send to the members of the General Assembly to express some of the very serious concerns relating to the following areas: reduction in funding for local education, erosion of the Virginia Retirement Systems, information concerning the Comprehensive Service Act program, erosion of the funding and assistance for local law enforcement, line of duty act and the support of the Senate version of the budget.

All Supervisors expressed their support of this resolution.

**RESOLUTION 022211-3 EXPRESSING THE GRAVE CONCERNS OF THE ROANOKE COUNTY BOARD OF SUPERVISORS OVER THE VARIOUS APPROPRIATION ACTIONS OF THE 2011 SESSION OF THE VIRGINIA GENERAL ASSEMBLY**

WHEREAS, the House of Delegates and the Senate have adopted competing measures for appropriating funds for the fiscal year beginning July 1, 2011; and



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WHEREAS, these various appropriation measures appear to reinforce a continuing theme of shifting more and more responsibilities onto local governments while at the same time significantly reducing State support and funding for these responsibilities; and

WHEREAS, before the General Assembly finally adopts these appropriation measures before adjournment of the 2011 session, the Board of Supervisors of Roanoke County desires to express its grave concerns over these proposed measures.

NOW, THEREFORE, BE IT RESOLVED by the Board of Supervisors of Roanoke County, as follows:

1. That it expresses in the strongest terms possible its opposition to the actions by the General Assembly as it continues to reduce its funding for direct aid to education.

2. That it expresses in the strongest terms possible its opposition to the actions by the General Assembly as it continues to reduce its funding for its support for the Virginia Retirement System and to erode the stability of a system that once was fully funded.

3. That it expresses in the strongest terms possible its opposition to the actions by the General Assembly to shift to local governments additional responsibilities under the Comprehensive Services Act, by reducing the State's share of costs for this program, including non-mandated funding, therapeutic foster care funding, special education related services, and expansion of mandated population. This action is unprecedented in that for the first time localities would be responsible for paying a portion of the State's share of the 50/50 match with the federal government, and which could increase local caseloads by as many as 190,000 additional cases.

4. That it expresses in the strongest terms possible its opposition to the actions by the General Assembly as it continues to reduce its funding and assistance for local law enforcement by its reduction for HB599 funding.

5. That it expresses in the strongest terms possible its opposition to the actions by the General Assembly as it shifts to localities responsibilities for funding the Line of Duty Act which was originally established as a State program and responsibility.

6. That it expresses in the strongest terms possible its opposition to the actions by the General Assembly to restrict the power and authority of local governments with respect to local tax revenues, including local real estate tax rates and assessments, personal property tax, BPOL, tobacco tax, transient occupancy tax and machinery and tools.

7. That it expresses its support for the Senate budget amendments.

8. That the Clerk to the Board of Supervisors is directed to send a copy of this resolution to the members of the Roanoke Valley legislation delegation and to the House and Senate budget conferees.

On motion of Supervisor Church to adopt the resolution, and carried by the following recorded vote:

AYES: Supervisors Moore, Altizer, Flora, Elswick, Church

**IN RE: PUBLIC HEARINGS****1. Public Hearing on policies and procedures to guide the redistricting process in Roanoke County, Virginia (Paul M. Mahoney, County Attorney)**

Mr. Mahoney explained this public hearing was established to hear from the citizens with respect to policies and procedures to guide the redistricting process in Roanoke County. Roanoke County is mandated to perform a redistricting every ten years as a result of the census and the objective is to have one person, one vote in order to have equal representation. Mr. Mahoney indicated the draft resolution was prepared for the Board's consideration.

Chairman Church then opened the public hearing and the following citizens spoke.

The first speaker was Ms. Brenda Hale of 3651 Martinell Avenue, Roanoke, Virginia 24018 who was speaking on behalf of the Roanoke Branch of the NAACP. Ms. Hale thanked all of the Supervisors and Mr. Mahoney for the opportunity to speak stating she loved the open communications. Ms. Hale then advised with her was Mr. Peter Watson, Second Vice President of the Roanoke branch. She stated she would like for the Board to take into consideration something that is indigenous to the state of Virginia. Ms. Hale indicated there are three words she wanted to introduce to the Board this evening. The first word is packing- packing occurs when lines are drawn in such a way to create districts with 70, 80, or even 90% black voting age population, that's packing. The second word is cracking, cracking occurs when areas of concentrated black population, which could constitute one or more majority black districts is divided among several predominately white districts minimizing black voting strength. Finally, stacking occurs where heavily black districts or concentrations of black population sufficient for independent representation are combined with predominately white districts or concentrations of population. Ms. Hale explained the reason to watch for this as it can provide a situation where it dilutes the black vote. Ms. Hale then reiterated for the Board to bear this in mind. This is indigenous across the state, not necessarily indigenous to Roanoke County but I am required to tell you that they had advised me to address these three terms when we address public assemblies and municipalities like this. Additionally, each election district for a particular legislative body must contain an equal number of citizens and your distinguished attorney has alluded to that already. The purpose is to ensure that each individuals vote is given equal weight in the electoral process. Based on equal protection clause, which is the 14<sup>th</sup> amendment of the United States Constitution and that bears out one person, one vote. Ms. Hale stated Roanoke County has bailed out of the Voting Rights Act of 1965, but must still remain in compliance with Section 2 of the of this act which prohibits any malpractice or malfeasance. Ms. Hale indicated she is assured that Roanoke County will move

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forward with the best interest of all citizens in the County taken to heart; she has high expectations and loves this open process that you have initiated.

The last citizen to speak on this item was Jerry L. Canada of 5911 Plantation Road, Roanoke, Virginia 24019 who indicated he was not speaking on behalf of the School Board of which he is a member, but as a private citizen. He stated that she has been a School Board member for nineteen (19) years and this is his opportunity to ask that consideration be given to the fact that there are five magisterial districts, each of these districts, with the exception of Hollins has a high school and a middle school located within the district. Northside and Glenvar both sit in the Catawba magisterial district. Mr. Canada indicated that even though Northside consist of two third's (2/3) of the students from the Hollins district, students from Burlington, Mountain View Elementary and Glen Cove make up the other schools that feed into Northside. Mr. Canada stated he would respectfully ask the Board as they develop their policies in the interest of fairness and equality that the Board sees fit to make things equal throughout the County and having one high school and one middle school sit in each magisterial district.

Chairman Church then recognized Ms. Judith Stokes, the County Registrar, Betty Graham, Deputy Assistant General Registrar and Dana Martin, representative of the electoral board.

**IN RE: PUBLIC HEARINGS AND SECOND READINGS OF ORDINANCES**

**1. Ordinance to amend the Roanoke County Zoning Ordinance by the addition of amendments relating to Small Wind Energy Systems (Philip Thompson, Deputy Director of Planning)**

Mr. Thompson indicated this was the second reading of this ordinance to incorporate small wind energy systems in the Roanoke County Zoning Ordinance. Mr. Thompson indicated the Planning Commission has approved by a vote of four to zero. He outlined the changes that were being made to Articles Two, Three and Four. Additionally, Mr. Thompson advised that he had included in the Board's packet, copies of noise decibels as requested by the Board at the last meeting.

Supervisor Elswick stated that he has a citizen from 12 O'Clock Knob that wanted to put up a windmill and that is why he asked Staff to release the small windmill ordinance amendments earlier than the large windmill amendments. Additionally, Supervisor Elswick stated there are some people who would like to have a small windmill, can afford them and he stated he feels they make sense as long as it is done in a manner that does not impact the neighbors who live nearby. Supervisor Elswick indicated that he is a proponent of the small windmills. He further stated he had done some research and wanted to know where the 60 decibels came from. Mr. Thompson responded it was a suggestion from the Planning Commission based on a sound chart that was provided and a list of other localities and their requirements for small wind

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energy systems. Supervisor Elswick stated he personally wanted staff to do a little more investigation and by looking at what somebody else did is not necessarily the answer for Roanoke County. He indicated he had visited Stan Breakell of Breakell Construction who has sixty seven (67) solar panels supplying all of his needs as well as selling half of the output back to AEP or getting energy credits. Additionally, he is going to put a windmill on his business location and he has developed some good information. In addition to that, there is a Dr. Burdisso at Virginia Tech who has small windmills inside of a wind tunnel and is accumulating a great deal of information about the noise and how far the noise travels. Finally, Supervisor Elswick stated there is Mr. Hansen from Boones Mills who has a windmill, solar panels and other alternative energy kind of devices. He stated it would be very easy to go to Boones Mill and take a decibel meter and listen to the output from that windmill or other small ones that are in the area rather than relying on what somebody else put in their ordinance. He then stated with regard to the 60 decibels, he is buying a 20,000 kilowatt generator and running full blast will put out 66 decibels at twenty-three feet (23). Supervisor Elswick stated that it has been suggested the noise requirement for the small windmills be the same as someone running a lawnmower. He reiterated, in other words, lawnmowers generating 60-70 decibels. He suggested staff should ask the neighbor of whoever puts up a small wind mill to be subjected to lawnmower noise twenty-four (24) hours a day, seven (7) days a week. Supervisor Elswick indicated with regard to the sections asking for special use permits, he personally would like to see the ordinance defined in such a manner that citizens can without having to come in and ask for a special use permit, they know what the requirements are and they can go ahead and purchase their windmill and get it installed without having to come back to the Board because in some areas it can be done. Additionally, he stated he would like for staff to define the areas where it is by right so citizens can go ahead and institute the process. He indicated that he personally would like for staff to go back and revise the ordinance, especially for the amount of decibels that would be audible to a nearby neighbor and personally the section on guy wires, he stated he does not know why guy wires would present a problem to anyone so personally he would just like to see staff look at it again, revise it, do a little more research and then bring us the revised ordinance. Mr. Thompson responded that the information provided to the Planning Commission can be gauged. Additionally, staff did visit several wind turbines in Dublin, one at the Volvo plant and also sent to Pulaski and Wythe County where they were seen firsthand in operation. Supervisor Elswick enquired if the decibels were measured with Mr. Thompson responding he did not have a decibel meter, but could not hear them from where he was standing. Mr. Thompson indicated most of the turbines were eighty (80) feet in height and actually the loudest one that we heard was forty-five (45) feet in height. Mr. Thompson indicated they did do other things in their research. Supervisor Elswick then inquired if staff just went to go look at them, that is it? Mr. Thompson responded staff visited several things, a lot of research was done and Lindsey Blankenship is here if the board would like to speak about some of those things, but the question is what is considered a reasonable

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standard. The Planning Commission decided they thought 60 decibels was a reasonable standard. Supervisor Elswick then asked if Mr. Thompson could tell him the decibels from fifty (50) feet or one hundred (100) feet away from the Volvo plant or wherever you went with Mr. Thompson responding that he did not have a decibel meter to measure it. Supervisor Elswick then asked what staff had brought back from the visit. Mr. Thompson responded the visit was to see the visual impact, were there any noises associated with it that could be audibly heard, what were some of the issues with the property owners in putting these in, looking at the height. Supervisor Elswick then asked how close staff had gotten with Mr. Thompson responding right underneath it.

Chairman Church then cautioned that questions should not be a rapid-fire back and forth due to the number of questions that will be raised and everyone can be involved in the participation.

Supervisor Elswick stated there was a recommendation from the World Health Organization that is a fairly credible organization that recommends ambient noise levels be measured prior to installation and a five (5) decibel increase be allowed after installation and recommends thirty five (35) decibels is optimum for sleeping conditions and ninety percent (90%) of people will be awakened by a sixty (60) decibel noise.

Chairman Church then opened the public hearing and reminded the audience all public hearing comments would be limited to small wind energy systems only. The following citizens spoke regarding this issue.

Mr. James W. Gray of 6408 Orchard View Lane, Roanoke Virginia stated he is not against wind turbines, but he does question the noise levels. He stated he had done some research and has pulled up a study that was made for the State of Michigan by Lawrence Technology University and will quote some things from this report. He stated the dictionary defines noise as unwanted sound. This article goes on to describe sound, sound power, broadband sound, frequency and so forth. Cars, lawn equipment, jet engines, wind turbines all produce broadband sounds. Sound pressure levels are measured in decibels; sound pressure level is used to determine loudness, noise exposure and hazard assessment. He indicated one hundred and forty (140) decibels is the pressure that causes most people physical pain. A volume change of three (3) to five (5) decibels is clearly noticeable. Wind turbines generate two types of noise; aerodynamic and mechanical. Aerodynamic noise is generated by blades passing through the air. He stated small turbines are more likely to produce noticeable, mechanical noise because of insufficient insulation. Mechanical noise may contain discernable tones, which make it particularly noticeable and irritating. Noise exposure can affect sleep, increase the time to fall asleep and alter the cycle of sleep. Noise levels of sixty (60) decibels wakes ninety percent (90%) of the people after they fall asleep and fifty five (55) decibels increases time to fall asleep and forty five (45) decibels wakes ten percent (10%) of people. As Mr. Elswick said, the World Organization recommends that the noise levels be below thirty five (35) decibels for optimal sleeping. Intermittent peaks of forty five (45) decibels occurring more than forty

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(40) hours per night or peaks of sixty (60) decibels occurring more than 8 hours a night will disturb most people's sleep. Intermittent starts and stops may cause an issue with small residential scale wind turbines. For residential parks and schools they are talking about maximum wind to the north should be ten (10) decibels greater than existing. Mr. Gray asked the Board to read this information and go through it, and noted one thing he wanted to share with the Board is he does have a sound meter. On the last page, you will notice he took some readings on a very windy day last week. I had sixty three (63) decibels, dogs barking two doors down the street was sixty three (63), noise from my diesel truck idling in the driveway was seventy two (72). Additionally, there is other information; even trash pick up this morning was between sixty and seventy (60 and 70), that will wake you up. In regard to ambient noise levels, the ambient noise in my home at 2:30 yesterday afternoon was thirty five to forty five (35-45) decibels and at 11 o'clock last night were twenty to twenty five (20-25) decibels.

Mr. Mark Hanson at 184 Vista Lane, Fincastle, Virginia 24090 and is here to have a small wind discussion. He stated he was with the Roanoke Community Service Volunteer Renewable energy organization that installs solar wind to reduce or eliminate power bills. Presently, he stated the organization would like to see the sixty (60) decibels, keeping it simple, they would like to see that sixty (60) decibels stay in place that's for dogs, lawnmowers, etc; it's a distance thing, I emailed the Board the Bergey wind turbine data, like a twenty (25) mile an hour wind is fifty (55) decibels the Bergey one kilowatt I have is three to four (3 to 4) decibels above ambient and forty two (42) feet down wind and that is important to keep in mind because it's a distance thing so you know you'd say sixty (60) decibels' is a lot line which it already is now, that should suffice so and on the no guy wire proposal, he stated his windmill uses quarter inch thin guy wires barely standard; telephone poles use three eighths to a half an inch ( $\frac{3}{8}$ ths to  $\frac{1}{2}$ ) inch so if we eliminate guy wires we have to remove all the guy wires on the telephone poles. He indicated from the picture of his windmill, you cannot really see the guy wires, one photo is about two hundred feet back, and if you want to stop by my house and see it running, you are welcome; some of the folks here did that. Mr. Hanson stated the other thing about the guy wires, they are five thousand dollars (\$5,000) cheaper than a monopole for residents, now of course, big wind is a whole different story than that, it's also easier to tilt down so you don't have to climb it so you can tilt the tower down for service. Mr. Hansen stated with regard to the third item of the height, we would like to see the hundred foot tower requirements stay; putting your wind turbine on a short pole is like putting your solar panels in the shade. He indicated they need to be about thirty (30) feet above the surrounding trees, above the turbulence and the thing with the sixty (60) foot ordinance including the blades is the shortest towers I know are made at 60 feet so that kind of puts it down like at fifty or fifty five (50 or 55), including the blade so a lot of people are not going to go to two public hearings. Mr. Hanson indicated with regard to the viewsheds, he feels that's a matter of opinion, we look at antennas, cell towers, telephone poles and power lines and when we talk about viewshed, pretty wind turbines should follow the same approval course as antennas.

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Ms. Karen Vietmeier of 460 Blue Bell Lane in Roanoke, Virginia stated she is representing the Sierra Club and would like to speak to the critical need of encouraging and promoting new technology, which is much needed to achieve the goal of non-polluting renewable energy. Some of the recommendations, specifically some of the amendments under Article four (4) are at cross purposes with that goal. Specifically the three amendments which are prohibiting guy wires, requiring special permission to be obtained for towers over sixty (60) feet and the noise level of sixty (60) decibels, which is just about what my speaking voice is at this time. These features are ubiquitous in other structures and so would be onerous burden placed on wind generators, which would have the effect of discouraging innovation rather than encouraging it that I think should be our goal. Rather than throwing up obstacles to innovative ways of achieving clean, renewable energy, we should do all in our power that we can to encourage it.

Mr. Rudy Vietmeier of 460 Blue Bell Lane in Roanoke, Virginia stated he would like to speak primarily to the issue of noise and had obtained a chart which has been handed out to the Board. He indicated this data illustrates that the noise created by these wind mills is quite small; it is probably no louder than the voice you are hearing now. Additionally, he noted that was not always the case, indeed an editorial in the Roanoke Sunday Times this past week described a noise problem at a wind farm in the Tehachapi Mountains in California. I relocated here from California so I am familiar with that area. The criticism the writer makes about instillation is entirely valid. The main objection being the incessant swoosh-swoosh sound, but he is describing a technology that is at least thirty (30) years old. The proposal before you has the benefit of hindsight. Current technology has had the opportunity to go to school on these older installations. As a consequence, the rotation of current generator is much lower as such two of the problems associated with older system have been drastically reduced; the swoosh-swoosh sound as well as the overall sound and the problems of bird being killed. I hope after carefully consideration of the technological advances made in the current systems you will see your way clear to amend the draft ordinance to remove the guy wire, sound and height restrictions.

Mr. Bob Crawford of 6620 Shingle Ridge Road, Roanoke, Virginia I am speaking as a conservationist and advocate of reasonable regulation. On the several acres where I and my family live, tall trees eliminate what might otherwise be a usable site or two for small wind generation, so I am not interested as a wind power producer, nor do I have business involvement in wind power. Mr. Crawford advised economic benefits to our locality-both immediate and ongoing-will result from enabling homeowners, farmers and small businesses to install and use small wind systems, but the regulating ordinance must avoid unreasonable restrictions which would reduce or disable the effective performance of a small wind unit. Many localities have enacted ordinances for small wind generation and we should follow the norms they have generally found useful. The professional wind industry group, the American Wind Energy Association (AWEA) provides models. If we add further restrictions, we will

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simply sideline our locality from participating in the benefits of this growing enterprise-of which Roanoke County could be a future hub for equipment and installation. With a reasonably formed ordinance, we will gain economic benefits, and the advantages arising from demonstrating our local initiative in environmental stewardship, something corporations look for in evaluating a locality's quality of life. With regard to tower height: a wind unit must be sufficiently above trees and buildings in its vicinity to escape turbulence and reach productive wind. In our area, many common trees reach sixty to one hundred (60 to 100) feet as the attached listing shows. Tower height (not counting the several feet of blade extent) limited to 100', as *in* many ordinances, may be reasonable, that is the hub height, not including the extension of the blades though some locations will not be suitable because of their own tree or building obstruction. The proposed ordinance's safety setback provision of a clear "fall distance" of slightly over the length of the tower will itself serve to limit tower height in some cases. There is no need to apply more restrictive limits on tower height than is typical of model ordinances. Where a property does not have adequate space for a one hundred foot (100) tower, the site's features will dictate the effective height limit according to the terms of the Ordinance. In reference to tower guy wires as long as stability requirements are met, it seems arbitrary to prohibit guy wires. It will sharply limit choices and needlessly increase the cost of some installations. Guy wires are crucial for affordable and safe installation and maintenance. Finally, with regard to noise, the wind makes noise itself when it blows, masking other noise. There is no reason to depart from the sixty (60) decibel limit of the model ordinances.

Mr. Dan Crawford, 2311 Kipling Street, SW., Roanoke, Virginia thanked Roanoke County for the opportunity that is being extended tonight to everyone who will speak, when it is all said and done and the dust settles, we will all know we were heard. Mr. Crawford advised small wind turbines, like any other mechanical or electrical device, need routine inspection, maintenance and occasional repair. The most common type of home system involves a system of guy wires, a gin pole, a winch and some rigging know-how. With this, the tower can be lowered, the work performed from the ground, then raised again. The advantages of this are quite obvious. Prohibiting guy wires would in his opinion effectively kill small wind in the County for the home owner in all but a few instances, at best. There are taller systems with guyed towers that do not tilt down, and of course, unguyed towers are available, but at a significant increase in cost. The common estimate is an additional five thousand dollars (\$5,000). I believe your intent is to protect the property owner's interests, not to kill small wind. The national and global shifts toward clean energy are sure signs of where we need to be going. Wind power, when you balance expense in creating a system and add in the carbon footprint and weigh that again the power generator wind power is a clear winner over all the other technologies. Subsequently, wind power is the most popular, rapidly' growing source of clean energy in the world. Uncommonly strict restrictions on support systems, height and noise levels will send a strong message that will have a negative impact on the



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region's ability to attract, or retain progressive businesses, industries and of course workers.

Mr. Brian DuGrerier of 8733 Plantation Road, Roanoke stated as everyone can all see, gas prices are rising faster than ever, this is eventually going to make everybody's electric prices rise more. The government has seen this problem for years and has been pushing for twenty percent (20%) of energy to come from the wind by 2030; we are currently at about two percent (2%). Now this is not impossible though most studies consider big wind the primary way to reach the goal there's no reason small wind shouldn't be allowed to be used anywhere possible. A small wind turbine can reduce home power consumption from fifty to ninety percent (50% to 90%). Everyday new electronics are coming out that people have to have and some people can't live without is causing more and more stress on the electric companies to supply or demand. Another thing to think about is if you pay ten percent (10%) of what you used to pay on your electric bill, that will leave a large chunk of change in your pocket to go out and spend on things you would not normally buy improving the overall economy. A lot of people complain about the viewsheds which is clearly an opinion. When I see a wind turbine all I think of is progress and clean energy. To me, every house and building and every object man-made could obstruct my viewshed but how picky can we be, really? We've heard a lot about the noise and most studies say that a small wind isn't much louder than your refrigerator. Now could you imagine living without your refrigerator today? And sleeping as far as I go I have to turn a fan on to go to sleep because it's impossible to sleep in complete silence. All we want to do is help generations coming after us to rely less on fossil fuels since we all know they won't be here forever, but if my neighbors view is more important then there probably isn't much hope for us.

Dr. Michael Burgoon of 3921 Sun Valley Road, Roanoke, Virginia stated and he has got to admit he is probably the least prepared person here tonight but wanted to thank you all for being here and being here an hour and half and I really respect what you do for public service because I know I wouldn't be cut out for this so thank you very much. I would like to just address some points to support the maintaining the noise levels at sixty (60) decibels and the guy wires. As a healthcare provider, one of our greatest challenges is for wellness and long term health care is considering the effects of environmental pollution and we don't have to look far to see them these days from the BP oil spill, and to mountain top removal. This is a great opportunity and I'm really interested in supporting it. I'm not interested in putting up a wind mill, but I have been around and seen a lot of windmills, the first windmill I saw was over thirty (30) years ago and to be honest with you it never occurred to me that it was loud and I never heard anyone talk about that. I did find when I was doing some research that it is great to see the Sierra Club supporting these measures and also the National Audubon Society quote, "strongly supports properly cited wind power as an alternative energy source."

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Mr. Brian Lang of 6752 Quail Place, Roanoke, Virginia 24019 stated he was looking over the material that was available on the County's website which the planning commission is submitting to the board for consideration and one of the things I was really struck by was that when I looked at the other localities existing regulations on small wind energy systems, I found that Roanoke County's proposal appears to be by far the most restrictive. If you look at the localities heights that they allow, Roanoke County's is the lowest except for one which was I believe was forty five (45) feet for smaller lots but there is nothing else as restrictive as Roanoke County's for the one's which had it clearly set. You can see a similar trend on the setback to this being recommended, there are other localities ranging from the urban city of Suffolk to rural Pulaski County which have less setback requirement than is being recommended to you. So the impression that the recommendation give is that the planning commission is attempting to kill small wind energy systems in Roanoke County. I hope that's not the case, it's simply the impression. I know that the Board of Supervisors several years ago passed a resolution to attempt to reduce the county's carbon footprint in the future which is quite a challenge given that we are growing and this is one of the areas that you can really make some tangible accomplishments on that. I would propose that the county sends the board of supervisors, sends the planning commission back to the drawing board, come up with a progressive policy which encourages small wind energy systems in Roanoke County rather than one which effectively discourages them. Asking somebody to put something up that has a maximum height of sixty (60) feet when other localities are allowing one hundred to one hundred and twenty (100 or 120) feet and a homeowner is probably looking at a payback period when they are considering purchasing a wind turbine for their home and that payback period is going to grow exponentially when they have to have a sixty (60) foot max height versus one hundred twenty or one hundred (120 or 100). It really can make the difference in whether they are going to buy them at all. Another aspect where they appear to be over regulating is on the use of guy wires, if you can use three (3) guy wires to support a structure, it can be a lighter duty structure, less visually obtrusive than a lattice type structure which they recommend. Another feature of the lattice type structure is that it tends to attract birds because of the crisscrossing of the angle iron of the structure and it's more likely to result in the bird kills which are one of the concerns about wind turbines. If you allow a monopole with guy wires it also lets the do it yourselfer who likes to do their own maintenance is likely to be the sort of person who would erect these wind turbines. It lets them lower it themselves to do that annual maintenance. So I would encourage you not only to reject their recommended restrictions, but to send back to the drawing board, come up with something that encourages it and perhaps consider waiving the permit fees for installing wind energy systems.

Doug and Mary McCallum of 4824 Wade Road, Roanoke, Virginia. Ms. McCallum spoke first and advised we strongly support the small wind ordinances as they are written. Even though they are very restrictive, they do allow some flexibility on a case by case basis. Roanoke County citizens should be allowed the opportunity to

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offset pollution from traditional power sources using small residential wind turbines. Benefits to the community include: reduced pollution, reduced demand on the local energy grid, increase local energy and dependence, reduce peak power demand, increase in state electricity generation, diversified energy portfolio, American green jobs and increase regional economic growth. One residential ten (10) kilowatt turbine will offset approximately one point two (1.2) tons of air pollutants and two hundred and fifty (250) tons of the green health gases. This is equal to taking one and one half (1 and ½) cars off the road. This is very positive step in the right direction and just a couple of comments on some of the other speakers. This wind turbine only turns when the wind is going at eight (8) miles per hour so at the middle of the night it's not running, think about how often it is over eight (8) miles per hour wind it is not twenty four (24) hours by any means. The gentleman with the meter that he said he was measuring different things; he said that the wind itself was sixty three (63) and so you're putting the limit at sixty (60) so that would be below the sound of the wind. And I know where I live you hear the wind in the trees and the howling through the branches and it's very loud. Mrs. McCallum then gave the floor to Mr. McCullum who stated he is an engineer by profession and also by degree and one of things he has always been fascinated with is the ability to create power from wind. You know, there's the negative aspects of wind; shingles coming off houses, things of that nature. To me, it's great to see a positive building to capture power from the wind. So, you know, we know that the Dutch have been doing this for centuries, it's well understood and developed industry and we're really happy that the county is looking at this seriously. One thing I want to point out is that continued finite resources are a great concern to me. It's far better to invest in local jobs and projects then to continue sending our earnings to foreign interests to buy resources that are quickly disappearing and I think it's in our country's best interest to support this type of project, and if I could add one more thing, the Planning Commission's been working on this for eighteen (18) months, I think it's time to move forward, go with what you have, and learn with the first few projects, don't hold us up again, don't send it back to the drawing board. It's been a long time.

Chairman Church then recessed for ten minutes.

Mr. Adam Cohen of 7139 Starlight Lane, Roanoke, Virginia stated I am speaking as a citizen but I do want to tell you I'm a representative of the Roanoke County I'm on the Green Valley Council I'm a member of the board of the Roanoke City Clean and Green Committee which is in charge with reducing carbon in the city, I'm the Vice President of the Roanoke Renewable Energy and Electric Vehicle Association, and I'm also on the board of the U.S. Green Building Council and I'm an advising member of the board for the Virginia Western Alternative Energy Program. I have a dog in this bite and I want to talk about this a little bit. A few weeks ago I was halfway on my way to go watch Fiddler on the Roof when you guys were considering the last ordinance and I thought even though I personally believe that we should have unrestricted access to all types of alternative energy, I thought the ordinance that they had come up with was reasonable and didn't worry about it. And I came back the next day to find that they had

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put all kinds of additional restrictions on the wind and rather than just being a middle of the road ordinance it now became a restrictive ordinance. And these changes just don't make sense to me. Site generation really should be allowed anywhere by anybody and I just want to take on three things very quickly. The hundred foot wind generator that needs to go back into the ordinance, 60 foot barely gets you above a canopy, you're talking about it on a 5 acre parcel, and don't forget that you allow hand radio towers seventy five (75) feet and 100 feet before you put the tower up. Guy wires, there's no reason not to have a guy wire on the towers that makes them much more affordable and much more serviceable for the homeowner. The noise issue is just a red herring, it's like a bird argument, and people throw it up all the time but you have to realize that it doesn't turn unless it's blowing wind and the additional noise above the wind is so small that you won't notice it. So somebody says oh it's a sixty (60) decibel noise well if the winds blowing outside, you've got a sixty (60) decibel noise outside you have a tiny fraction of that above, it's the same argument it's been thrown out time after time after time when people try to defeat these things but unfortunately it just doesn't hold a lot of wind when you really live around one of these things. The viewshed, that's one hundred percent (100%) a matter of opinion. I loved what Brian said, if my neighbor's views are more important than my children, then we are all in trouble. I went all across Europe this summer and every time I saw wind farms I was just enthralled, I thought it was one of the most beautiful sights that I have seen, much more beautiful than a lot of things that we put on the landscape. And the last thing I want to say that as a member of the board on the Virginia Western, we have a large grant to train young people and re-train older workers for green energy jobs in wind in solar in geothermal and Virginia does not support wind energy as a whole and in any type of alternative energy, were trying to train these people for jobs that really don't exist today and if you want to encourage local job growth one of the things you can do is make this a much more progressive ordinance, I do agree with Brian on that we should send it back but I would like to see the Board give the McCullens a special permit right now and let them put up their windmill.

Ms. Elizabeth Woodstock of 7139 Starlight Lane, Roanoke, Virginia stated I think a lot of the important points have already been made, I think it's really pretty clear and obvious to most of us that green energy is the right thing to do but wind turbines are an economical and practical and wonderful thing to do for as many people as we can and I think to have the ordinance to be restrictive is not the way we want to go. I think we should be encouraging people to try these things and when we look back on this decision years from now, which side of the issue does Roanoke County want to fall on? Do we want to be encouraging people to do this sort of thing or do we want to discourage them from doing the right thing?

Ms. Monica Rokicki of 1211 Fourth Street, SW, Roanoke, Virginia 24016 stated I live in old southwest on 1211 Fourth Street and I love this city very much and it's indeed a privilege to speak with you this evening. The question about wind, to make an ordinance that respectively supports or restricts wind is not just a be or not to be

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question. It seems like you could chose to have wind or not to have wind but by creating all of these restrictions you are effectively saying no and you are effectively making a choice a defective choice for dirtier types of energy such as coal and oil. As a private citizen I have some criteria for making my own choices and those choices are first to the facts, second the community and the third, the long term over the short term. Using these criteria I chose to effectively support wind. The facts are that we have global risk, we have climate change, we have pollution, and wind mitigates all of these undesirables. In the community which I choose, wind just makes monetary sense for both the individual homeowner who chooses to have wind on their property as well as for a community that's facing budget cuts coming from above if we don't have to create utility infrastructure we all save money. And I choose for the future, because short term emotional or political gain decreases the cost of climate change, of carbon intensive energy sources and decreased security on the future and that's just not the answer. I do agree that guy wires should be allowed, that's just makes perfect sense. I do agree that a one hundred (100) foot limit makes more sense, that actually if there is any noise, gets the noise farther away from the ground. And as far as the noise that is exactly as others have said, the wind makes noise, and a wind turbine nearly uses the wind in order to create this energy and the additional noise is negligible. And so I agree I think that the ordinance needs to be actually made a little bit more permissive and I appreciate your time and hope that we will see a more permissive wind ordinance in the future.

Mr. Jim Bier of 1024 Whetsone Road, Ferrum, Virginia stated I grew up in Roanoke County and I love it. I'm coming at this from two different perspectives; one is at individual property rights. It seems that there isn't a point on having restrictions that aren't necessary and important on individual property owners the planning board's proposal having been reduced to sixty (60) feet effectively is killing the option for wind energy for most people. I'm also coming at this from an environmental or conservationist kind of stance if you do not allow wind in a progressive way then what you're basically saying is that we are going to stick with the status quo and tear off more mountain tops and so on. The sixty (60) foot height restriction also has an environmental and viewshed impact. In order to get usable wind from a sixty (60) foot installation you're going to need to cut down a lot of trees around that area making a bald spot on the landscape for no good reason other than the restriction itself. So, please reconsider the hundred foot tower wind installation requirement not reducing it to sixty (60) feet especially with the special use permit exemption that just means that you guys and we are going to have to be here for each of those special use proposals and I don't think that's anything that any of us want. The guy wire restriction seems senseless I was present during the installation of a wind system that was able to be put up by relatively untrained folks and could be maintained that way as well I don't think we want to send people up a hundred feet (100) in the air for no good reason, that's another

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individual property rights issue. Or sixty (60) feet in the air even, once you fall from forty (40) feet in the air it doesn't matter how much higher.

Mr. Gary Johnson of 199 Hoophill Knob Road, Ashville, North Carolina stated I may be the lone voice tonight saying the view is important and that it does mean something to visitors that do travel the Blue Ridge Parkway. The Blue Ridge Parkway is all about the view and so for years we've been looking at and trying to understand just what the views are and how do people who visit the Blue Ridge Parkway feel about those views so we've done a number of surveys where we have surveyed visitors and asked them about the changes in land uses and does that matter to them. And the answer that has come back is various things effect people's perceptions of views. Some of its residential developments, some of it is the big box developments and cell towers we've not had really any research that I've been able to find in the United States about peoples visual perceptions and impressions about wind turbines but I think until we do have that research completed and understand something about it we really I think need to cautiously look at this and if there are things that people can do as they develop wind turbines on their property that they do things that could help mitigate that and I think that it is reasonable to ask private citizens to give some thought to placement to the coloration of the turbine stands and so that's really what I'm here to ask for, Mr. Thompson I think did a good job representing the e-mail that we had sent talking about viewshed. So again I think that is a reasonable way to proceed and have landowners work with the Blue Ridge Parkway to at least evaluate what the potential affects may be but maybe even more importantly to look at are there ways to mitigate really the visual impacts of putting up these turbines. So that's really why I'm here tonight, to recommend that that be a part of your consideration. The Blue Ridge Parkway is a great resource to this community and the states of Virginia, North Carolina, and again visitors have told us that views are important and what is seen in those views so again I would ask you all to think about that.

Mr. Eldon Karr of 8011 Poor Mountain Road, Roanoke, Virginia stated he was coming before the Board this evening as a contributing citizen of the Roanoke County community Chair of, the newly established, Bent Mountain Chapter of FRIENDS of the Blue Ridge Parkway, President of the Bent Mountain Civic League, and an experienced member of twenty-one (21) years of the Roanoke County Board of Zoning Appeals. I also served on the steering committee for the last major county-wide update of the Roanoke County Comprehensive Plan. Mr. Karr stated he is an Architect and Urban Designer/Planner with nearly four decades of dedicated professional pursuit of improving of our relationship with our natural environment through a comprehensive, "reality-show", understanding of building construction, land-use planning, and love for the virgin wonders of our planet. This decision before you this evening is a major "turning-point" for the economic future of Roanoke County and, indeed, the entire Roanoke Valley Region of Virginia, via tourism. At your first reading of this proposed amendment to the zoning ordinance, I spoke to you about "procedural concerns" at the

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Planning Commission level regarding questions over viewshed assessments of the impact of the proposed amendment, as it currently stands. After reviewing the attachments staff has provided with you this evening, I applaud your action at the first reading that initiated further pursuit of detailed information relating to concerns over the scenic and sustainable qualities of our natural environment. Tonight, based upon the time given to you to consider the impact of such a fully studied data over ten years, which was not provided to the Planning Commission by staff, you must return this document to the Planning Commission for revision, or revise the document yourselves. Just as no decision particularly with such broadly impacting cost versus benefit considerations, should be enacted without comprehensive understanding, I suggest and request that you return this proposed amendment to the Planning Commission for reconsideration. I would like to let you know that the organizations that I represent and I are not opposed to small wind energy systems at all. I think the Planning Commission frankly made a mistake in the way they amended the ordinance that they forwarded to you. I think they fell short, they considered viewshed over one public meeting that was all I heard. During that public meeting they tried to amend the ordinance and pass it on to you for your first and second readings. I think it needs more work. We don't need to discourage small residential wind turbine systems.

Chairman Church closed the public hearing and opened the floor for comments.

Supervisor Elswick stated the Board's job is to study what are potentially major kinds of things happening and consider the alternatives, the impacts, do a little research and listen to people's opinions as to what kind of research they might have done. Additionally, he stated he thinks that the ordinance can be revised to make it more tenable to people in certain locations; there's no differentiation to a rural area and an urban area. Supervisor Elswick explained he can see where the people in an urban area where there are a lot of structures already would think that it's not that intrusive, but in a rural area or in a viewshed of the parkway it's much more intrusive. Additionally, he stated he should make an exception for that differentiation between the types of areas that they might go into, on 419, the noise level is always sixty to seventy (60 to 70) decibels, but in a rural area when the wind is not blowing it is twenty five to thirty (25 to 30) decibels and that is what people are accustomed to and sleep without noise. Supervisor Elswick remarked with regard to the height, he does not know whether sixty (60) feet is right or one hundred (100) feet is right, but somewhere there is data that the Board can get access to that will tell us the efficiency difference in terms of electrical output between sixty (60) feet and one hundred (100) feet; that kind of information is surely available and as far as measuring the sound, the decibel level, there are lots of people who have already done that and there are lots of recommendations, the World Health Organization, the International Standards Organization, they have done a great deal of research on the decibel levels for wind mills. He stated he thinks the Board should incorporate that into the ordinance. With regard to guy wires, Supervisor Elswick stated if it permits a smaller pole and the guy

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wire is only a quarter of an inch thick he does not see that would be a huge detriment to any neighbor. Additionally, he added he thinks the Board should try to talk to some people who live near currently installed small wind mills and ask them what impact it has had on their neighbor, whether or not it disturbs their sleep, whether or not it impacts the value of their home, or any kind of information that the Board can get should go into this but definitely have to make some distinct differentiation between the urban and rural areas and the kinds of places where these might go. He added that in the future the cost might come down to where people can afford them and maybe our ordinance should be geared towards the future rather than today.

Supervisor Altizer first questioned Mr. Mahoney concerning a separate design parcel of property mainly for Explore Park in the ordinance and is it theoretically and realistically a State piece of property with Mr. Mahoney responding in the affirmative. Supervisor Altizer then asked if a cell tower were to want to relocate and the VRFA wanted to put one there to generate income and open and do things like that, is that something that would come before this Board or is that something that would be allowed by right, by virtue of it being the State's piece of property? Mr. Mahoney responded there was a litigation that went to the Virginia Supreme Court several years ago and it involved cell towers. In that litigation, the Virginia Department of Transportation (VDOT) was putting up one of the cell towers in the median on Interstate 66 in northern Virginia outside Washington, D.C. and the argument was since that was State-owned property and it was for VDOT purposes, the Fairfax County zoning ordinance did not apply. There was a great argument and VDOT went ahead and leased space on that cell tower to private operators and so Fairfax county was argued successfully to the Virginia Supreme Court that those private uses then brought that cell tower within the jurisdiction of Fairfax County and the Fairfax County zoning ordinance so Mr. Mahoney stated he thinks that is the answer to Mr. Altizer's question. Mr. Mahoney stated he would be guessing, because he did not know what a judge would do, but if Explore Park (the VRFA) wanted to erect a small wind energy power for its own governmental purposes, arguably that might well be outside of the jurisdictional authority of Roanoke County to regulate its zoning ordinance. However, if VRFA wanted to use it for private purposes in addition to public purposes he stated he would argue it would still come within this Board's power to regulate under its zoning ordinance. Supervisor Altizer stated he did not know whether Roanoke County should be carving out a specific piece of property if nothing would ever have to come before the Roanoke County Board, i.e. the ordinance stating that it is allowed in Explore Park if in fact Roanoke County would not have jurisdiction either at all. He stated he wanted to make sure the Board is not creating some legal problems for the County. Mr. Mahoney responded that potentially Mr. Altizer was correct and going from memory, but it is his recollection the Board wanted to create the Explore Park district with the contemplation that VRFA would lease Explore Park to a private developer and so the intent was at that time that a private use or commercial use was contemplated for Explore Park and if that has changed then the governmental uses would predominate and therefore Roanoke



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County would not have authority to regulate. Supervisor Altizer then asked if it was Mr. Mahoney's recommendation to leave Explore Park as it is written with Mr. Mahoney responding in the affirmative based on not knowing what will occur in the future. Supervisor Altizer stated that he remembered what the Board went through with the rezoning of Explore Park and a lot of special use permits were given. Supervisor Altizer then asked Mr. Thompson if he recalled the height limits in Explore Park, with Mr. Thompson responding negatively and Mr. Mahoney advising he will research.

Mr. Altizer stated while Mr. Mahoney was looking he would move on. He questioned in the ordinance under small wind is there is a section there that says if someone has small wind turbine and if they fail to maintain its use or they fail to maintain its repair, then is there is some jurisdiction that allows the County to move forward to have it removed or repaired with Mr. Thompson responding affirmatively. Supervisor Altizer stated he had read through the micro wind sections and he did not see any such language that if the windmills was not used anymore or in disrepair that the County had that same ability and was he correct with Mr. Thompson responding that the same language could be added into that same section if that is the intent of the Board.

Supervisor Altizer then asked with regard to guy wires, he knows amateur radio towers are by special use permit, but what about guy wires. Mr. Thompson replied in any residentially zoned district, the towers can go up to seventy five (75) feet for an amateur radio tower and in the agricultural districts, towers can go up to one hundred (100) feet and there are no specifications on the power; there are guy wired towers for those uses. Supervisor Altizer questioned that it is allowed for amateur radio towers, but not for wind. Mr. Thompson responded by stating he was trying to remember the discussion since it had been a long time since the discussion with the Planning Commission. He stated he thought part of it had to do with the parcel size and if there was enough space on it for guy wires. He stated he could not remember if aesthetics were an issue. Mr. Thompson stated if the Board so desires, it can be struck through and taken out; and advised from the research that was done they are typically less costly than monopoles or lattice towers and would be more affordable for homeowners to utilize.

Supervisor Altizer questioned with regard to the setbacks was the relationship the front, to the side and to the back, is that one hundred and ten feet back, front, back and side with Mr. Thompson responding affirmatively that it was from every property line.

Chairman Church stated in his opinion, if the Board is going to allow seventy five (75) feet for a ham operator without restriction, he does not see this as a problem knowing that your wind energy will not be effective until it gets above a certain level. He further stated he does not have a problem with one hundred (100) feet to be effective. He added he thinks the Board wants to be restrictive, but not action killing; the Board wants to be able to recognize property values and property owners and viewsheds, but also recognize it has an opportunity to look at some clean energy within

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reason. Additionally, Chairman Church stated he is hearing guy wires really do not present a problem.

Supervisor Flora stated that he has heard comments that perhaps the Planning Commission was trying to kill small wind. He stated he really does not think that was the case. He explained that he thought what they tried to do was compromise on an ordinance they felt would get approved and in doing so probably overregulated in some cases. Supervisor Flora indicated one thing he is concerned about is the height; being so low that is not even above the tree canopy being somewhat ineffective in terms of being able to produce what was intended to be produced. He stated he is in agreement with Chairman Church and the Board should take a second look at that item. He further added that in regard to guy wires he had made a comment at a previous meeting that he does not see a problem with guy wires depending on where they are located. He further explained that guy wires are fairly invisible, but they also allow for smaller poles, which are even less visible. In regard to the setback of one hundred and ten percent (110%) he stated he thinks is appropriate; it is called the fall zone so it will not fall anywhere except on the property that the property owners owns. Supervisor Flora stated he is hung up on is the sixty (60) decibels. He clarified that he does not necessarily have a problem with sixty (60) decibels, but he does not understand because he is receiving so many different various illustrations of what sixty (60) decibels really is. He further stated that he thinks the Board has more work to be done on this ordinance because of the issues being raised. He detailed he would truly like to go out with someone who has a decibel meter and maybe the Board might want to do this. He clarified he would like to go out and hear exactly what these sounds would sound like. He stated he would like to have this resolved and would suggest that perhaps the Board needs to take this up at a work session. He further commented he would be ready to vote on it now if it had some of these other things in it, but would like to understand exactly what sixty (60) decibels sounds like.

Supervisor Moore stated she thought at the last meeting during the first reading of the ordinance, she believed Mr. Thompson stated there were seventy five (75) decibels for an outside air conditioning unit. Mr. Thompson responded there is a range of sixty to seventy five (60 to 75) decibels. Supervisor Moore then asked Mr. Thompson to confirm that he had stated on a small monopole, or small wind, that eight (80) feet was the minimum that would sustain wind to run these units. Mr. Thompson responded based on the information that he had seen, usually it is twenty to thirty (20 to 30) feet above the height of any obstruction to get to the free wind flow and some sources cited twice the height of whatever that structure or obstruction is; so there is a general range of seventy five to eighty (75 to 80) feet to get to that level. Additionally, Mr. Thompson noted it was his belief that the County Administrator forwarded information to the Board that would also answer Supervisor Elswick's question concerning power production. He detailed that when discussing heights throughout the County, there is information from the American Wind Association that deals with the importance of height. They say if you have a sixty (60) foot turbine height that if the

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height is taken to eighty (80) feet the production goes up two hundred and twenty six percent (226%) and if the height go up to one hundred (100) feet it goes up to three hundred and forty four percent (344%). Accordingly he added the higher the turbine the more wind power it will generate and a better return of investment for the property owner. Supervisor Moore then stated she thinks the Board needs to be concerned about the viewsheds and all of our citizens and their property, but also stated the Board must also be open minded about alternative energy, wind energy and the people that want it. She stated she did not want to restrict these turbines that so much that no one will come forward and use alternate energy. Additionally, she noted in addition to the cost factor of putting the guy wires up, she feels it makes it much safer for the adjoining property owners to have guy wires. She stated it has been eighteen (18) months staff has been working on this issue as well as the Planning Commission and she thinks the Board needs to make a decision on it and accordingly moved to amend the ordinance to read any small wind or monopole that is installed on a property under an acre shall be a maximum of 80 feet in height, number two, any small wind or monopole that is installed on any property that is an acre or more shall be a maximum of 100 feet in height, number three guy wires shall be permitted and number four to change the language the same as the micro wind on the inspections, or change the micro wind to the small wind on the inspections.

Supervisor Elswick then asked if staff had any data that shows bladed windmills versus helical ones so that the Board might consider approval of a helical design in an area where it would be more appropriate than a bladed design. Mr. Thompson responded that staff had looked at some of the manufacturers of the vertical access wind turbines which did not provide a decibel reading, just stating they are quiet or nearly quiet. Mr. Thompson elaborated by advising typically, the poles that they sit on are not very high to begin with, so the total height for these stand alone systems, maybe 30 to 40 feet in height require clear wind flow to enable it to work properly. He added these systems do have turbulent wind issues, and you can see them in downtown areas and in rural areas it has to be pretty wide open with no tree coverage. He advised this ordinance would allow those types of systems to go in and does not prohibit either vertical or horizontal access wind turbines, this ordinance would allow for both. Supervisor Elswick stated he was thinking more in terms of the Blue Ridge Parkway viewsheds and in subdivisions like Cotton Hill where most of the trees have been cut may be more appropriate. Mr. Thompson responded that mixed messages are sent through the research with part of the research stating how much wind power they actually generate and some of the evidence states the higher you get the more free flow winds you get with the horizontal access generating more power than the vertical access and is an analysis for the homeowner to do for the best return on their investment. Supervisor Elswick then stated he felt the Board was pretty far along on the ordinance and the decibel issue is the only remaining question. He stated he agreed with Supervisor Flora and wanted to know personally before approving the final number.

Supervisor Altizer then inquired if Mr. Mahoney had found the information

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he was researching. Mr. Mahoney responded by stating when the county adopted the Explore Park district, it had a master plan that had height limits, but he did not have the master plan on his laptop, and was still trying to get access to the system. He stated that based on his memory in the master plan, the Board imposed height limits, but it is not in the general ordinance at all; it is similar to a planned residential development or planned technology district. Supervisor Altizer remarked he was aware there were some height restrictions, and in that case, if it is Mr. Mahoney's recommendation, that the Board should still need to cut out and put Explore Park in this and advised he would like to see the Board consider small wind, but by special use permit because that way he thinks the Board is covered under the original concept plan. If it would come back to us we would have another "bite of the apple" when it comes to Explore Park.

Chairman Church stated while Mr. Mahoney continues to search he wanted to confirm that Supervisor Altizer was adding this particular restriction or special use permit for Explore Park into the amendment.

Supervisor Altizer responded in the affirmative stating since Explore Park is a cutout section and there were some height limitations when we did the rezoning, and without not knowing what those height restrictions are if the Board is going to move forward tonight, he would like to make sure that that a special use permit be included for Explore Park.

Supervisor Elswick commented that he had another idea of rather than setting a specific decibel level, 25, 30, 60, 900, the Board should measure what the normal decibel level is for various hours of the day and under various conditions; one would be the decibel level when you are sleeping, when the wind is blowing at so many miles per hour, when the neighbors are running their lawn mower, when they are doing the trash pickup and then say to the people who want to install a windmill, for all of those different times, you can exceed that by five (5) decibels which would put flexibility into it. Mr. Thompson responded that there was discussion at the Planning Commission about whether or not the requirement be a certain decibel level above what is considered ambient; there is ambient noise and the wind turbine would be able to go above ambient. The question from staff and others is how would you measure that and at what point, obviously ambient is going to be, for example when the wind is blowing are you going to pick out the noise between the wind turbine and the wind noise. How would you distinguish between the two? Supervisor Elswick stated it would be known beforehand, before they are installed. Mr. Thompson responded in the affirmative, but questioned if the conditions were the exact same when you are out there trying to measure it. Is it a ten (10) mile an hour wind that is blowing versus a fifty (50) mile an hour wind? There are a lot of factors that would go into it and after discussion the Planning Commission decided they would rather set a standard for decibel level versus going with a decibel level over ambient. Mr. Thompson also stated that discussion also covered the noise level at the property line and it was decided because of the variation in lengths they would rather stick with a known quantity being the property line.

Supervisor Moore stated she wanted to reiterate what Mr. Thompson just

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said. She indicated she has been out on decibel readings before and due to the wind and all kind of other conditions, there were four different readings and this reading was done in SW Roanoke County.

Supervisor Flora stated he thinks the argument has already been made. Additional, he stated he thinks even though Supervisor Elswick is looking for some way to make it more identifiable, it is virtually impossible to enforce. He explained he does not think you can go with a variable number of decibels and it would be so incredibly argumentative that it would be very difficult to enforce. He detailed that he would have to take the information that has been provided on the sixty (60) decibels to determine whether or not it is accurate and it makes a difference if you are in an urban area or a rural area. Overall he commented that sixty (60) decibels seems to be reasonable by most all of the standards that he has seen; however he would like to know what 60 decibels actually sounds like.

Chairman Church advised that Mr. Mahoney had found the information requested by Mr. Altizer. Mr. Mahoney stated in response to Mr. Altizer's question, in December 2005, the Board adopted the ordinance with respect to Explore Park with a sliding scale for height. The maximum structure height shall be 45 feet for structure at the minimum buffer line, that maximum height may be increased one foot for each two additional feet of buffer yard provided for a up to a maximum height of 125 feet. The minimum buffer line changes depending on whether you are adjacent to Mayflower Hills Baptist Church, Rutrough Road, but the bottom line is that you go from 45 feet to 125 feet the further back from that buffer line you go.

Supervisor Altizer confirmed that Mr. Mahoney's answer solidified his reason for requesting the need for a special use permit for Explore Park.

Chairman Church then inquired if Supervisor Altizer wanted to include that language in the amended motion on the floor with Supervisor Altizer responding affirmatively as long as it was acceptable to Supervisor Moore.

Supervisor Altizer then asked Supervisor Moore if she had added the micro's to have the same language and if so, to add to her motion to make small wind special use only for Explore Park rather than a by right use.

Mr. Mahoney then stated his interpretation of the motion as being "on page 160 of your agenda materials, under Section 30-71, the Explore Park District, that would be changed to permitted with a Special Use Permit. On the bottom of that page under 30:87-6, B-1 the last two sentences of B-1 would be deleted, B3A where you have the chart, up to one acre – 80 feet and over one acre 100 feet. On Page 162, under 14 B, add the words after any small wind energy system, add and micro wind energy systems.

Supervisor Elswick then stated some of the Board have expressed a desire to delay final approval until we get a little better feel for what the decibels ought to be and there are ways to do that. Chairman Church responded that he understood Supervisor Elswick concern but the Board needs to deal with the motion on the floor and if that is approved up or down that will dictate what happens on taking a look at

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decibel readings. He clarified that a substitute motion has to be voted on, unless it is withdrawn.

Supervisor Altizer then asked with regard to the micro's extend above the ordinance ceiling by 15 feet with Mr. Thompson responding negatively and clarified by advising they can go up to 15 feet and the ceiling is the height. Supervisor Altizer stated he wanted to make sure that if it is not operating it should require the same conditions as small wind. Mr. Thompson explained under Section B, any small wind system or micro wind system found to be unsafe or abandoned by the building officials shall be repaired by the owner or removed within 90 days. Supervisor Altizer then inquired of Mr. Mahoney the meaning of abandoned and explained whatever language that is being used for small wind should be used for micro. Mr. Mahoney suggested the wording inoperable be used with Mr. Altizer stating he was good if Supervisor Moore is in agreement.

Supervisor Flora stated if it becomes in inoperable, it should be taken down and what if they stop using it and it just sits there. Mr. Thompson inquired if he was talking about the small or micro systems with Supervisor Flora advising it does not make any difference. Mr. Thompson responded by stating the small systems has language regarding abandonment in there, so we are referring to being inoperable for the micro systems. If it is abandoned, every year the small wind systems have to submit information and if it is determined to be abandoned, they have ninety (90) days to remove it.

Chairman Church then requested that Mr. Mahoney repeat the amended wording for the ordinance. Mr. Mahoney then outlined on page 160 of the agenda materials, under Section 30-71, the Explore Park District, that would be changed to permitted with a Special Use Permit. On the bottom of that page under 30:87-6, B-1 the last two sentences of B-1 would be deleted, on page 161, under B3A where you have the chart, up to one acre – 80 feet and over one acre 100 feet. On Page 162, under 14 B, add the words after any small wind energy system, add and micro wind energy systems found to be unsafe and then add or inoperable. Chairman Church then inquired if Supervisor Moore was satisfied with the changes with Supervisor Moore responding in the affirmative.

**ORDINANCE 022211-4 TO AMEND THE ROANOKE COUNTY ZONING  
ORDINANCE BY THE ADDITION OF AMENDMENTS RELATING TO  
SMALL WIND ENERGY SYSTEMS**

WHEREAS, In June 2009 the Roanoke County Planning Commission and Community Development staff identified various provisions of the Roanoke County Zoning Ordinance to review and update as provided in Section 30-14 of the Roanoke County Code and Section 15.2-2285 of the Code of Virginia; and,

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WHEREAS, wind energy was one topic identified not only by County staff but also requested by citizens for further research to develop provisions to recommend be incorporated into the Zoning Ordinance; and,

WHEREAS, the Planning Commission has reviewed wind energy issues in ten work sessions over the past eighteen months, and on January 24, 2011, completed its recommendations for proposed amendments incorporating small wind energy systems; and,

WHEREAS, wind energy is a renewable source of alternative energy and alternative sources of energy are beneficial to Roanoke County, the Commonwealth of Virginia and the United States of America; and,

WHEREAS, public necessity, convenience, general welfare and good zoning practice are valid public purposes for such recommendations by the Planning Commission and action by the Board of Supervisors; and,

WHEREAS, the Planning Commission held its public hearing on these proposed amendments on February 1, 2011, after legal notice and advertisement as required by law; and,

WHEREAS, the Board of Supervisors held its first reading on this ordinance on February 8, 2011, and its second reading and public hearing after legal notice and advertisement as required by law on February 22, 2011.

NOW, THEREFORE, be it ordained by the Board of Supervisors of Roanoke County as follows:

1. That the following sections of the Roanoke County Zoning Ordinance be amended to read and provide as follows:

## **Article II, Section 30-28 – Definitions and Use Types**

***Anemometer: An instrument for measuring wind force and velocity.***

***Net metering: A program offered by a utility company that allows customers with eligible renewable energy systems to offset a portion of the electric energy provided by the utility.***

***Rated nameplate capacity: The maximum rated output of electric power production equipment specified by the manufacturer.***

***Shadow flicker: The visible flicker effect that occurs when rotating turbine blades cast shadows on the ground and nearby structures, causing the repeating pattern of light and shadow.***

***Wind energy: Power generated by converting the mechanical energy of wind into electrical energy through use of a wind generator.***

***Wind energy conversion system:*** An electric generating device, the main purpose of which is to convert the kinetic energy available in the wind to mechanical energy, consisting of one or more wind turbines, a tower, associated control or conversion electronics and other accessory structures and buildings, including substations, electrical infrastructure, transmission on lines and other appurtenant structures and facilities.

***Wind energy system, micro (building integrated):*** A building-mounted wind energy conversion system that has a manufacturer's rating of 10 kW or less.

***Wind energy system, small:*** A wind energy conversion system consisting of a single wind turbine, a tower, and associated control or conversion electronics, having a rated nameplate capacity of not more than 50 kilowatts (kW) for residential uses and not more than 100 kW for other uses. For the purpose of residential net metering, Virginia Code §56-594B limits the electrical generating facility to a capacity of not more than 10 kilowatts (kW).

***Wind energy tower:*** The structure on which the wind turbine is mounted.

***Wind monitoring or temporary meteorological tower:*** A temporary tower equipped with devices to measure wind speeds and direction; used to determine how much wind power a site can be expected to generate.

***Wind turbine:*** A wind energy conversion device that converts wind energy into electricity through use of a wind turbine generator; typically having one, two or three blades, nacelle, rotor, generator, controller and associated mechanical and electrical conversion components mounted on top of a tower.

***Windmill:*** A machine designed to convert the energy of the wind into more useful forms of energy, such as grinding, pumping, etc., using rotating blades driven by the force of the wind to turn mechanical equipment to do physical work, without producing energy.



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## Article III – District Regulations

SEC. 30-32. - AG-3 AGRICULTURAL/RURAL PRESERVE DISTRICT.

Sec. 30-32-2. - Permitted Uses.

(A) Permitted By Right

6. *Miscellaneous Uses*

***Wind Energy System, Small\****

SEC. 30-33. - AG-1 AGRICULTURAL/RURAL LOW DENSITY DISTRICT.

Sec. 30-33-2. - Permitted Uses.

(A) Permitted By Right

5. *Miscellaneous Uses*

***Wind Energy System, Small\****

SEC. 30-34. - AR AGRICULTURAL/RESIDENTIAL DISTRICT.

Sec. 30-34-2. - Permitted Uses.

(A) Permitted By Right

5. *Miscellaneous Uses*

***Wind Energy System, Small\****

SEC. 30-36. - AV AGRICULTURAL/VILLAGE CENTER DISTRICT.

Sec. 30-36-2. - Permitted Uses.

(A) Permitted By Right

6. *Miscellaneous Uses*

***Wind Energy System, Small\****

SEC. 30-41. - R-1 LOW DENSITY RESIDENTIAL DISTRICT.

Sec. 30-41-2. - Permitted uses.

(A) Permitted By Right

4. *Miscellaneous Uses*

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***Wind Energy System, Small\****

SEC. 30-42. - R-2 MEDIUM DENSITY RESIDENTIAL DISTRICT.

Sec. 30-42-2. - Permitted Uses.

(A) Permitted By Right

3. *Miscellaneous Uses*

***Wind Energy System, Small\****

SEC. 30-45. - R-3 MEDIUM DENSITY MULTI-FAMILY RESIDENTIAL DISTRICT.

Sec. 30-45-2. - Permitted Uses.

(B) Special Use Permit

4. *Miscellaneous Uses*

***Wind Energy System, Small\****

SEC. 30-46. - R-4 HIGH DENSITY MULTI-FAMILY RESIDENTIAL DISTRICT.

Sec. 30-46-2. - Permitted Uses.

(B) Special Use Permit

4. *Miscellaneous Uses*

***Wind Energy System, Small\****

SEC. 30-61. - I-1 LOW INTENSITY INDUSTRIAL DISTRICT.

Sec. 30-61-2. - Permitted Uses.

(A) Permitted By Right

6. *Miscellaneous Uses*

***Wind Energy System, Small\****

SEC. 30-62. - I-2 HIGH INTENSITY INDUSTRIAL DISTRICT.

Sec. 30-62-2. - Permitted Uses.

(A) Permitted By Right

6. *Miscellaneous Uses*

***Wind Energy System, Small\****

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SEC. 30-71. - EXPLORE PARK DISTRICT.\*

Sec. 30-71-3. - Permitted Uses.

*Wind Energy System, Small\**

***(D) The following uses are allowed only by special use permit pursuant to section 30-19. An asterisk (\*) indicates additional, modified or more stringent standards as listed in article IV, use and design standards, for those specific uses.***

**1. Miscellaneous Uses**

*Wind Energy System, Small\**

## **Article IV – Use and Design Standards**

### **SECTION 30-87-6. Wind Energy System, Small**

**(A) Purpose and Intent:** *The purpose of this section is to regulate the placement, construction, and modification of small wind energy systems while promoting the safe, effective and efficient use of small wind energy systems and not unreasonably interfering with the development of independent renewable energy sources. The requirements set forth in this section shall govern the siting of small wind energy systems used to generate electricity or perform work which may be connected to the utility grid pursuant to Virginia's net metering laws or serve as an independent source of energy.*

**(B) General Standards:**

- 1. Type of Tower:** *The tower component of any small wind energy system shall be one that is recommended and certified by the manufacturer.*
- 2. Tower Color:** *Small wind energy system towers shall maintain a galvanized steel finish, unless Federal Aviation Administration (FAA) standards require otherwise. The zoning administrator may allow a property owner, who is attempting to conform the tower to the surrounding environment and architecture, to paint the tower to reduce its visual obtrusiveness. A photo simulation may be required by the zoning administrator.*
- 3. System Height:**
  - (a)** *System height is defined as the vertical distance measured from average grade at the base of the tower or other supporting structure,*

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*whether mounted on the ground or on a rooftop, to the highest point of the turbine rotor or tip of the turbine blade when extended to its highest elevation.*

<i>Parcel Size (Acres)</i>	<i>Maximum System Height</i>
<i>Up to 1.00</i>	<i>80 feet</i>
<i>Greater than 1.00</i>	<i>100 feet</i>

- (b) *A small wind energy system may exceed the height limitations listed in this section if a special use permit has been obtained by the property owner.*
- (c) *The applicant shall provide evidence that the proposed height of the small wind energy system does not exceed the height recommended by the manufacturer or distributor of the system.*
- 4. ***Setbacks:** The small wind energy system shall be set back a distance at least equal to one hundred ten percent (110%) of the height of the wind energy system from all property lines, and roadways. The setbacks for a small wind energy system may be reduced if a special use permit has been obtained by the property owner. Setbacks established in this section or through a special use permit shall supersede any other setback requirement in the zoning ordinance.*
- 5. ***Ground Clearance/Safety:** The minimum distance between the ground and any protruding blades utilized on a small wind energy system shall be 20 feet, as measured at the lowest point of the arc of the blades. The lowest point of the arc of the blade shall also be twenty (20) feet above the height of any structure within one hundred fifty (150) feet of the base. The supporting tower shall also be enclosed with a 6-foot tall fence or the base of the tower shall not be climbable for a distance of 12 feet.*
- 6. ***Number of Towers:** More than one tower may be permitted on an individual piece of property provided that all setback requirements have been met.*
- 7. ***Noise:** The wind energy system shall not exceed 60 decibels (dBA), as measured at the closest property line, except during short-term events such as severe windstorms.*
- 8. ***Lighting:** No lighting shall be incorporated on the tower or wind turbine unless required by the Federal Aviation Administration (FAA) or other appropriate authority.*
- 9. ***Advertising:** Signs, writing, pictures, flags, streamers, or other decorative items that may be construed as advertising are prohibited on wind energy systems, except as follows:*
  - (a) *Manufacturer's or installer's identification on the wind turbine, and*
  - (b) *Appropriate warning signs and placards.*

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10. **Speed Controls:** A small wind energy system shall be equipped with manual (electronic or mechanical) and automatic overspeed controls to limit the blade rotation speed to within the design limits of the small wind energy system.
  11. **Electric Utility Notification:** The applicant shall provide evidence that the provider of electric utility service to the site has been informed of the applicant's intent to install an interconnected customer-owned electricity generator, unless the applicant intends, and so states on the application, that the system will not be connected to the electricity grid.
  12. **Use:** A small wind energy system shall be considered an accessory use. The applicant shall provide information demonstrating that the small wind energy system will be used primarily to reduce on-site consumption of electricity.
  13. **Wind Monitoring or Temporary Meteorological Towers:** Small wind energy systems shall comply with the following:
    - (a) A wind monitoring meteorological tower with an anemometer and other wind measuring devices may be installed with the issuance of a zoning permit for the purpose of monitoring wind and other environmental conditions relevant to siting wind energy systems and used to determine how much wind power a site can be expected to generate. The zoning permit shall be valid for a period of one year.
    - (b) No wind monitoring meteorological tower for small wind energy systems may rise more than the allowable height of the proposed small wind energy system and shall meet the setback requirements in Sec. 30-87-6(B)4 of this ordinance.
  14. **Removal of Defective or Abandoned Small Wind Energy Systems:**
    - (a) Each year following the issuance of a zoning permit for a small wind energy system, the owner of such small wind energy system shall submit to the Zoning Administrator an affidavit that verifies continued operation of the wind turbine use and compliance with all requirements of this ordinance and other applicable regulations. Failure to submit required documentation shall result in the Zoning Administrator considering the small wind energy system abandoned. The owner of the small wind energy system shall remove the small wind energy system within ninety (90) days of receipt of notice from the County instructing the owner to remove the abandoned small wind energy system.
    - (b) Any small wind energy system and micro wind energy system found to be unsafe or inoperable by the building official shall be repaired by the owner to meet federal, state and local safety standards or removed within ninety (90) days.

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15. **Compliance with Other Regulations: Small wind energy systems shall comply with all applicable local, state and federal regulations.**

### **SECTION 30-88. Accessory Uses and Structures**

- (A) As defined in section 30-28, accessory uses and structures may be commonly found and associated with principal use types. Principal uses which are allowed by right or by special use may include accessory uses and activities, provided such accessory uses and activities are appropriate and incidental to the principal use, and provided they are designed and located in accord with the intent and provisions of this ordinance.

#### **Sec. 30-88-1. Accessory Uses: Agricultural Use Types.**

- (A) Agricultural use types may include the following accessory uses, activities or structures on the same site or lot:

- 5. Micro wind energy systems that project no more than 15 feet above the highest point on the structure and complies with the height requirement of the zoning district.**

#### **Sec. 30-88-2. Accessory Uses: Residential Use Types.**

- (A) Residential use types may include the following accessory uses, activities or structures on the same site or lot:

- 8. Micro wind energy systems that project no more than 15 feet above the highest point on the structure and complies with the height requirement of the zoning district.**

#### **Sec. 30-88-3. Accessory Uses: Civic Use Types.**

- (A) Civic use types may include the following accessory uses, activities or structures on the same site or lot:

- 7. Micro wind energy systems that project no more than 15 feet above the highest point on the structure and complies with the height requirement of the zoning district.**

#### **Sec. 30-88-4. Accessory Uses: Office Use Types.**

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(A) Office use types may include the following accessory uses, activities or structures on the same site or lot:

***7. Micro wind energy systems that project no more than 15 feet above the highest point on the structure and complies with the height requirement of the zoning district.***

Sec. 30-88-5. Accessory Uses: Commercial Use Types.

(A) Commercial use types may include the following accessory uses, activities or structures on the same site or lot:

***6. Micro wind energy systems that project no more than 15 feet above the highest point on the structure and complies with the height requirement of the zoning district.***

Sec. 30-88-6. Accessory Uses: Industrial Use Types.

(A) Industrial use types may include the following accessory uses, activities or structures on the same site or lot:

***9. Micro wind energy systems that project no more than 15 feet above the highest point on the structure and complies with the height requirement of the zoning district.***

2. That these amendments shall be in full force and effective from and after the date of their adoption.

On motion of Supervisor Moore to adopt the ordinance, and carried by the following recorded vote:

AYES: Supervisors Moore, Altizer, Flora, Church

NAYS: Supervisor Elswick

**IN RE: REPORTS AND INQUIRIES OF BOARD MEMBERS**

Chairman Church thanked the Northside girls' softball team and the Governor and his staff in Richmond. He advised he went with the Northside girls State Championship softball team on February 15, 2011 to meet the Governor and to honor these State champions in both the Senate and the House.

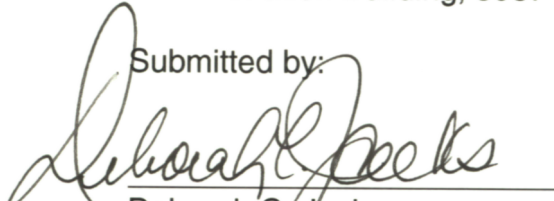
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**IN RE:      ADJOURNMENT**

Chairman Church adjourned the meeting at 9:56 p.m. to Tuesday, March 1, 2011, at 5:00 p.m. for a joint meeting with the Roanoke County School Board, School Administration Building, 5937 Cove Road, Roanoke, Virginia.

Submitted by:

  
Deborah C. Jacks  
Clerk to the Board

Approved by:

  
Joseph B. "Butch" Church  
Chairman